

July 19, 2001

Sam Sirhan
Superior Environmental Remediation, Inc.
1516 North Main Street
Mishawaka, Indiana 46545

Re: Registered Construction and Operation Status,
149-14345-00023

Dear Mr. Sirhan:

The application from Superior Environmental Remediation, Inc., received on May 10, 2001, has been reviewed. Based on the data submitted and the provisions in (326 IAC 2-5.1), it has been determined that the following soil remediation, to be located at 3855 East 250 North, Knox, Indiana, is classified as registered:

- (a) Two (2) recovery wells with pumps.
- (b) One (1) 500 gallon water holding tank (T1) with a maximum annual throughput of 1,000,000 gallons per year.
- (c) One (1) 1200 pound activated carbon treatment tank with a throughput of 220 acfm.
- (d) One (1) 4,000 gallon water storage tank (T2) with a maximum annual throughput of 1,000,000 gallons per year.

The following conditions shall be applicable:

Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

This registration is the first air approval issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to (326 IAC 2-5.1-2(f)(3)). The annual notice shall be submitted to:

Compliance Data Section

**Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015**

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Original signed by Paul Dubenetzky

Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

ERG/RB

cc: File - Starke County
Starke County Health Department
Air Compliance - Joe Foyst
Permit Tracking - Janet Mobley
Technical Support and Modeling - Michele Boner
Compliance Data Section - Karen Nowak

Registration Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3)

Company Name:	Superior Environmental Remediation, Inc.
Address:	3855 East 350 North
City:	Knox, Indiana 46534
Authorized individual:	Sam Sirhan
Phone #:	(219) 256-1490
Registration #:	149-14345-00023

I hereby certify that Superior Environmental Remediation, Inc. is still in operation and is in compliance with the requirements of Registration 149-14345-00023.

Name (typed):
Title:
Signature:
Date:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name: Superior Environmental Remediation, Inc.
Source Location: 3855 East 250 North, Knox, Indiana 46545
County: Starke
Operation Permit No.: 149-14345-00023
Permit Reviewer: ERG/RB

The Office of Air Quality (OAQ) has reviewed an application from Superior Environmental Remediation, Inc. relating to the construction and operation of soil remediation project.

New Emission Units and Pollution Control Equipment Receiving Prior Approval

- (a) Two (2) recovery wells with pumps.
- (b) One (1) 500 gallon water holding tank (T1) with a maximum annual throughput of 1,000,000 gallons per year.
- (c) One (1) 1200 pound activated carbon treatment tank with a throughput of 220 acfm.
- (d) One (1) 4,000 gallon water storage tank (T2) with a maximum annual throughput of 1,000,000 gallons per year.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

Existing Approvals

This is an application for new construction and there are no previous approvals issued to this activity.

Source Definition

Superior Environmental will be installing a groundwater and soil remediation operation on Starke County highway department property. However, since Superior Environmental and Starke County highway department are owned and operated by separate and unrelated entities with no common ownership or control between them, and they operate under different SIC codes, they are considered separate sources.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

A complete application for the purposes of this review was received on May 10, 2001.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (3 pages).

Potential To Emit Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	0
PM-10	0
SO ₂	0
VOC	22.7
CO	0
NO _x	0
Single HAP (Xylenes)	1.88
Total HAPs	3.07

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of all criteria pollutants is less than 100 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of all criteria pollutants is less than 25 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-6.1.
- (c) The potential to emit (as defined in 326 IAC 2-7-1(29)) of VOC is greater than levels listed in 326 IAC 2-1.1-3(d)(1), therefore the source is subject to the provisions of 326 IAC 2-5.5.1.
- (d) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.
- (e) This type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2.

County Attainment Status

The source is located in Starke County.

Pollutant	Status
PM-10	Attainment
SO ₂	Attainment
NO ₂	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Starke County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Starke County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

New Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	0
PM10	0
SO ₂	0
VOC	0.02*
CO	0
NO _x	0
Single HAP	0.002*
Combination HAPs	0.003*

* Controlled with Carbon Filter

- (a) This new source is **not** a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
 (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
 (c) any combination of HAPs is less than 25 tons/year.

This is the first air approval issued to this source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.

- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is located in Starke County and the potential to emit all criteria pollutants is less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of soil and groundwater remediation project will emit less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 8-1-6 (New Facilities - General Reduction Requirement)

This source does not have potential VOC emissions equal to or greater than twenty five (25) tons per year, therefore this source is not subject to the provisions of 326 IAC 8-1-6.

Conclusion

The construction and operation of this soil and groundwater remediation project shall be subject to the conditions of the attached Registration 149-14345-00023.

Appendix A: Emissions Calculations

Page 1 of 3 TSD App A

Soil Remediation

Company Name: Superior Environmental - Starke County Highway Department
Address City IN Zip: 3855 East 250 North, Mishawaka, Indiana 46534
MSOP: 149-14345
Plt ID: 149-00023
Reviewer: ERG/RB
Date: 05/23/2001

Emissions from Soil Vapor Purging Operation

Pollutant	Concentration in Air (ppm)	Molecular Weight	Concentration in Air (mg/m3)	Concentration in Air (lb/ft3)	Flow Rate (acfm)	Emission Rate (lbs/min)	Emission Rate (tons/yr)
Benzene	5	78	17	0.00	220	0.00	0.06
Toluene	58	92	220	0.00	220.00	0.00	0.79
Ethylbenzene	22	106	93	0.00	220.00	0.00	0.34
Xylenes	120	106	520	0.00	220.00	0.01	1.88
Total HAPs							3.07
Total Hydrocarbons	1499	102	6300	0.00	220.00	0.09	22.74

Appendix A: Emissions Calculations

Page 2 of 3 TSD App A

Soil Remediation

Company Name: Superior Environmental - Starke County Highway Department
Address City IN Zip: 3855 East 250 North, Mishawaka, Indiana 46534
MSOP: 149-14345
Plt ID: 149-00023
Reviewer: ERG/RB
Date: 05/23/2001

Emissions from Ground Water Discharge

Maximum VOC Concentration 100.0 ppm
Maximum Throughput 1000000 gal/yr
Vapor Molecular Weight 18 g/mol

Volume of VOC emitted per year = gal of groundwater / yr * (PPM of VOC)

Volume of VOC emitted per year = gal of groundwater / yr * (PPM of VOC)

Volume of VOC emitted = 100 gal/yr

Ideal Gas Law

$PV=nRT$

$n/V=P/RT$

$n/V= 1 \text{ atm}/[(0.08206 \text{ l} \cdot \text{atm}/\text{mol} \cdot \text{K}) \cdot 298 \text{ K}]$

$n/V= 0.041 \text{ mol/l}$

$n/V= 0.155 \text{ mol/gal}$

$n/V= 2.79 \text{ g/gal}$

$n/V= 0.006 \text{ lbs/gal}$

Potential to emit of VOC

Annual VOC emissions = Volume of VOC/yr * (n/V lbs/gal)

Annual VOC emissions = 0.614 lbs/yr

Annual VOC emissions = 0.0003 tons/yr

Total VOC potential to emit = Soil Purging + Discharged Groundwater

Total VOC potential to emit = 22.739 tons / year

Appendix A: Emissions Calculations

Page 3 of 3 TSD App A

Soil Remediation

Company Name: Superior Environmental - Starke County Highway Department
Address City IN Zip: 3855 East 250 North, Mishawaka, Indiana 46534
MSOP: 149-14345
Plt ID: 149-00023
Reviewer: ERG/RB
Date: 05/23/2001

Controlled Emissions

Both the soil vapor purge and the groundwater treatment system use carbon filtration to control emissions

Control efficiency 99.9%

Controlled VOC Emissions	0.023 tons / year
Controlled Xylene Emissions	0.002 tons / year
Controlled Total HAP Emissions	0.003 tons / year